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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/756,694	01/10/2001	Jae-seong Shim	1293.1163/MDS	4645

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EXAMINER

PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 04/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/756,694

Applicant(s)

SHIM ET AL.

Examiner

Sudhanshu C. Pathak

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on January 10th, 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-25 is/are allowed.
- 6) ☒ Claim(s) 1, 10 and 12 is/are rejected.
- 7) ☒ Claim(s) 2-9, 11 and 13-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on January 10th, 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Claims 1-to-25 are pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 & 12 (Apparatus & Method) are rejected under 35 U.S.C. 102(b) as being anticipated by Narichika (JP-8249829).

Regarding to Claims 1 & 12, Narichika discloses an apparatus and method for reproducing data from an input digital signal based on partial response maximum likelihood (Detailed Description, Industrial Application, lines 1-3 & Detailed Description, Problem Solved by Invention, lines 9-11 & Fig. 1-4), comprising an equalizer for equalizing the input digital signal (Fig. 1-2, element 4 & Fig. 3-4, element 12); a data detector which detects the equalized digital signal based on partial response maximum likelihood method (Fig. 2, element 10 & Fig. 4, element 14); and a level decision unit which detects levels corresponding to decision levels used in the data detector from the output of the equalizer and feeds back corrected decision levels to the data detector, the corrected decision levels adaptively varying with the output level of the equalizer (Fig. 1-4, element 5).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narichika (JP-8249829) in view of Applicant Admitted Prior Art (AAPA).

Regarding to Claim 10, Narichika discloses an apparatus and method for reproducing data from an input digital signal based on partial response maximum likelihood as described above. However, Narichika does not disclose a sampler, a direct current offset compensator, a level error detector, and an adaptive processor.

The Applicant Admitted Prior Art (AAPA) discloses a data reproducing apparatus comprising a sampler, which samples an input radio frequency signal and provides sample data (Fig. 1, element 100); a direct current (DC) offset compensator, which eliminates a DC offset from the sample data and the resultant data is input into the equalizer (Fig. 1, element 102); a level error detector which detects levels corresponding to the decision levels used in the data detector from the output of the equalizer and detects level errors between the detected levels and predetermined reference values (Fig. 1, element 108); and an adaptive processor which provides an adaptive filter coefficient to the equalizer so that the differences between the level errors and the target level values are minimized (Fig. 1, element 106). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention

that the components as described in the Applicant Admitted Prior Art can be implemented in the system as described in Narichika so as to provide a more accurate data reproduction in noisy environment, thus satisfying the limitations of the claim.

Allowable Subject Matter

6. Claims 2-9, 11 & 13-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claims 21-23 & 24-25 are allowable over the prior art of record because the cited references do not contain the specified limitation of a data reproducing apparatus comprising a level decision unit which detects a levels in each sample of a plurality of groups of consecutive samples and selects respective samples of each group corresponding to respective ones of the plurality of decision levels; further comprising a plurality of averagers each of which averages the corresponding selected respective samples of successive groups of consecutive samples and adjusts respective ones of the plurality of decision levels based on the respective averages.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (703) 305-0341. The examiner can normally be reached (Monday-Friday from 8:30 AM to 5:30 PM).

Art Unit: 2634

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to:

Crystal Part II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600